



COST-EFFECTIVENESS OF SITING OFFSHORE WIND PROJECTS

Prepared by NJ Department of Environmental Protection for
consideration by the Blue Ribbon Panel on Offshore Wind

Frequently Asked Questions:

Generally, four items are most likely to affect the cost of wind projects. These are: wind resource, water depth, financial incentives, and proximity to high power transmission and distribution systems.

How is Wind Resource Important?

The wind resource off New Jersey's coast is significantly better than that onshore, according to wind mapping conducted on behalf of the U.S. Department of Energy. Generally, the farther offshore you move, the better the wind resource. The wind resource onshore in New Jersey is generally considered marginal, at best. For this reason, potential wind developers will likely look first to offshore locations.

How is Water Depth Important?

Current technology in wind turbine development favors "monopile" mounting, a technique where a single steel shaft is driven, like a piling, into the ocean floor. The turbine is then mounted on top. This technology requires relatively shallow waters (less than 80 feet deep). Gravitational-based foundations, constructed of concrete or steel, have also been used. Placing a turbine in deeper water would require modified bases or floating platforms upon which turbines would be mounted. Currently, these technologies are not past conceptual design and employing either would significantly increase construction costs.

How are Financial Incentives Important?

Presently, offshore wind turbine development is not cost competitive without federal and/or state financial incentives. One federal incentive currently in use is the Production Tax Credit (PTC). The federal government provides a tax credit of 1.8 cents per kWh of production (reauthorized by Congress through December 2005). During the past year, when PTC authorization briefly lapsed, wind development stalled nationwide. Whether Congress reauthorizes the PTC beyond its current expiration date will be an important factor in determining the rate of growth of wind energy project development.



The State of New Jersey provides grants and loans to renewable energy project developers through its Clean Energy Program. This program, established by the Electric Discount and Energy Competition Act (N.J.S.A. 48:3-49 *et seq.*) is authorized through 2008.

How is Proximity to the High Power Transmission/Distribution System Important?

Any potential wind turbine site will require proximity to an existing, robust on-land transmission/distribution infrastructure. The cost of constructing transmission lines to connect to the grid is extremely expensive and requires environmental considerations. Wind energy developers

would logically strive to locate close to existing infrastructure, to minimize these costs and any potential environmental impacts. The wind mapping conducted on behalf of the U.S. Department of Energy includes locations of existing transmission system rights-of-way that can be used as an available reference.

What Other Issues Could Affect Cost?

To adequately inform decision-makers, any offshore wind development will require a more rigorous analysis than provided by this general guidance. This briefing paper does not address environmental concerns, which are sufficiently complex as to warrant a separate briefing analysis. Nor are aesthetic issues discussed, a comparatively complex issue.

State of New Jersey Blue Ribbon Panel on Development of Wind Turbine Facilities in Coastal Waters

Edward J. McKenna, Jr., Mayor of Red Bank and a member of the State Planning Commission. Mr. McKenna will chair the Blue Ribbon Panel.

Bradley M. Campbell, Commissioner, Department of Environmental Protection

Jeanne Fox, President of the Board of Public Utilities

Virginia S. Bauer, Chief Executive Officer and Secretary of the New Jersey Commerce, Economic Growth and Tourism Commission

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Bonnie J. McCay, PhD, a Rutgers Board of Governors Distinguished Service Professor at Cook College. She is currently Vice Chair of the Marine Protected Areas Federal Advisory Committee, U.S. Department of Commerce and Department of Interior.

Diane Wieland, Director of the Cape May County Department of Tourism, Chair of the Southern Shore Regional Tourism Council, and member of the Governor's Tourism Advisory Council.

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